



## Testing Services

**T**race Laboratories is a full service independent testing laboratory specializing in the testing of printed circuit boards, automotive products and military hardware. The company maintains two separate facilities in Chicago, Illinois and Linthicum, Maryland to serve U.S. customers.

Trace Laboratories-Central in Chicago is one of many U.S. firms that have benefited from technical information contained in *NASA Tech Briefs*, a publication designed to advise industry of recent technological advances and technologies available for transfer (see page 141).

Jeffrey A. Schutt, general manager of Trace Laboratories-Central, reports that his division used two *Tech Briefs* articles, plus follow-up Technical Support Packages from Jet Propulsion Laboratory, to enhance the company's testing process.

Specifically, NASA information on "electromigration" was applied to the surface insulation resistance (SIR) testing that Trace Laboratories frequently conducts on printed circuit board materials, such as fluxes and solder pastes (*below* a Trace technician is assessing the integrity of a prepared test pattern prior to subjecting it to testing). The NASA input helped optimize the SIR testing process without compromising testing data and it allowed Trace to reduce testing time.

This is important because SIR testing evaluates the effects on electronic materials that have been cleaned by an alternative method to the use of chlorofluorocarbon (CFC) solvents, which electronics manufacturers have used for years to clean components; they are seeking to eliminate CFC solvents, which are soon to be banned. SIR test data

on the durability of parts is used by manufacturers to refine their production processes.

Says Jeffry Schutt, "The Technical Support Packages from NASA reaffirmed much of what we already knew about electromigration but also opened our eyes to other issues that needed to be considered. The information enabled us to improve the quality of the service we provide our customers." •

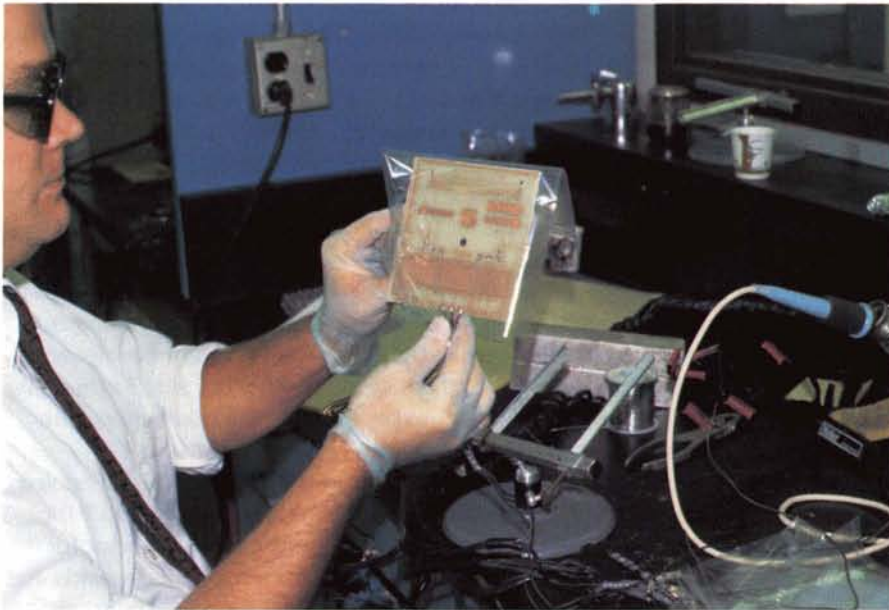
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